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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,755	11/19/2003	Stephen H. Tang	80107.038US1	6175

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LeMoine Patent Services, PLLC
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EXAMINER

MAI, SON LUU

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/716,755

Applicant(s)

TANG ET AL.

Examiner

Son L. Mai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-25, 27, 28 and 30-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-20 and 33-35 is/are allowed.
- 6) ☒ Claim(s) 21-25, 27, 28 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The papers filed 08-12-05 have been received and entered. Accordingly claims 7-25, 27, 28, and 30-35 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 21-25, 27, 28, and 30-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Fazan et al. (U.S. Patent Application Publication US 2004/0021137 A1) (hereinafter "Fazan").

Regarding claim 21, Fazan discloses an apparatus comprising: a plurality of rows (tracks 40s in figure 13) of memory cells; and a plurality of word line drivers (in control circuit 46) wherein each of the plurality of word line drivers is coupled to one of the plurality of rows of memory cells, the word line drivers to generate a first voltage (-2 V) when holding the state of the memory cells, a second voltage (+1 V) on a selected word line when writing a "0", a third voltage (-1.5 V) on the selected word line when writing a "1" and a fourth voltage (-2V) on unselected word lines when writing a "1." (See paragraphs [0098] through [0100]).

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Regarding claims 22 and 23, Fazan teaches the word line drivers are adapted to generate at least five different voltages (-2 V, -1.5 V, 0 V, 0.8 V, and + 1V) (See paragraphs [0081], [0098], [0099, and [0100]).

Regarding claim 24, Fazan teaches in figure 1, memory cells comprise floating-body transistors.

Regarding claim 25, Fazan teaches a memory device comprising: floating-body single transistor memory cells (figure 1); a plurality of word line drivers (in control unit 46 in figure 13) coupled to the floating-body single transistor memory cells; and a plurality of bit line drivers (in control unit 46) coupled to the floating-body single transistor memory cells; wherein the memory device is adapted to perform two-phase writes (write "1" and "0", see paragraphs [0098] and [0099]) in which the plurality of word line drivers drive a first voltage (+1V) during a first phase to write one logical value, and the plurality of word line drivers drive a second voltage (-1.5 V) during a second phase to write a complementary logical value and wherein the word line drivers are adapted to drive the first voltage during the first phase when coupled to a selected row and to drive a third voltage (-2 V) during the first phase when coupled to an unselected row.

Regarding claim 27, Fazan teaches that the word line drivers are adapted to drive the second voltage (-1.5 V) during the second phase when coupled to a selected row, and to drive a fourth voltage (-2 V) during the second phase when coupled to an unselected row.

Regarding claim 31, Fazan teaches the first voltage (+1 V) is higher than the third voltage (-2 V).

Regarding claims 28, 30 and 32, Fazan teaches all claimed features of a memory device as discussed in the foregoing paragraphs. The use of the memory device in an electronic system comprising an antenna; a first integrated circuit coupled to the antenna; and a second integrated circuit including the memory device recites intended use of the memory device. The memory device can be used in different systems as discussed in paragraphs [0105] and [0110].

Allowable Subject Matter

4. Claims 7-20 and 33-35 are allowed.
5. The following is a statement of reasons for the indication of allowable subject matter: The primary reason for allowance of the claims is the inclusion of the step of increasing a voltage on unselected word lines during a memory write cycle in which selected floating body transistors have their bodies charged.

Response to Arguments

6. Applicant's arguments filed 08-12-05 have been fully considered but they are not persuasive. The amended claims 21-25, 27, 28, and 30-32 still read on the Fazan patent as pointing out above.
7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son L. Mai whose telephone number is 571-272-1786. The examiner can normally be reached on 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

10-28-05



Son L. Mai
Primary Examiner
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